

Midland Water Supply

- We deliver approximately 9 billion gallons (27,620 acre-feet) of water a year
 - o Average winter day - 13.5 million gallons
 - o Average summer day - 35-37 million gallons
- Sources of water – surface water
 - o Accounts for 82% of total usage
 - o It is our first source since it is renewable
 - o We are in the middle of an old ocean, therefore, our water is highly mineralized
 - o Lake Ivie
 - Currently 31.52% of capacity – 174,706 acre feet (1 ac-ft = 325,829 gallons)
 - Total Capacity – 554,340 acre feet
 - o Lake Thomas
 - Currently 5.37% of capacity – 10,769 acre feet
 - Total Capacity – 200,604 acre feet
 - o Lake Spence
 - Currently 2.52% of capacity – 13,509 acre feet
 - Total Capacity – 517,262 acre feet
 - o Facts
 - Total current storage – 198,534 acre feet or 15.6% of total storage capacity (go to www.crmwd.org for updates)
 - For the first time we will have restricted deliveries
 - 2006
 - CRMWD delivered approx 70,000 acre ft
 - Released 8,000 acre ft for downstream uses
 - 114,000 acre ft evaporated
 - If all lakes were full, would have enough water for 6 ½ years with no rainfall
- Sources of water – ground water
 - o Accounts for 18% of our water
 - o Is also highly mineralized
 - o Located on University lands approximately 30 miles north of Midland
 - o Has arsenic and fluoride above regulatory limits and therefore must be blended with surface water to meet regulatory standards. We are limited to a maximum of 25% of our surface water flows due to this.

Water Supply Facts

- City supplies
 - o Water treatment plant capacity – 32 million gallons per day (mgd)
 - o Paul Davis well field capacity – 18 mgd
 - o Winter demands – approximately 13.5 mgd
 - o Summer demands – peak at 43 mgd with average of 35-37 mgd
- Groundwater
 - o Paul Davis Well Field
 - Contains 245,000 acre ft of water
 - Accounts for 18% of our supply
 - Is used in the summer for demands above what surface water can provide
 - Has arsenic/fluoride at levels above regulatory limits
 - Majority of water is owned by University Lands – we purchase by contract
- Surface Water Plant
 - o Tests for over 100 regulated contaminants
 - o Treat with coagulant
 - o Gravity settling
 - o Multimedia filters (anthracite coal and sand)
 - o Chloramines for disinfection
 - Chlorine and ammonia
 - Long lasting
 - Stable
 - o Current construction
 - Arsenic limits were dropped from 50 ppb to 10 ppb (1 ppb = 1 packet of artificial sweetener in an Olympic sized pool)
 - Adjusting coagulants to remove arsenic in surface water to new standards
 - Cannot treat straight groundwater at the plant
 - Will blend Paul Davis water to reduce arsenic/fluoride
 - Pumping capacity at the plant is 50+ mgd
 - o Operated and maintained by 18 employees working 24/7

Distribution System Facts

- Water Distribution system
 - o City area is approximately 71 sq miles
 - o Two pressure planes in town
 - High plane is approximately everything west of Garfield and north of Loop 250
 - 150 ft of fall from west to east across town
 - Approximately 2 ft = 1 psi
 - o We have four operational elevated tanks in town
 - 2 – 1 mg towers and 1 – 2 mg tower on high pressure plane and 1 – 2 mg tower on the low pressure plane
 - 10 mg ground storage that acts like elevated storage for the lower pressure plane
 - o Approximately 700 miles of distribution system pipes from 48" to 4"
 - o Approximately 36,000 connections
 - o Operated and maintained by 31 employees for both distribution and collection systems on call 24/7
- Wastewater Collection system
 - o Mainly gravity system
 - o Approximately 500 miles of line from 42" to 4"

Waste Water Facts

- WPCP
 - o Collects an average of 12.5 mgd
 - o Difference in supply and collection is irrigation – over 70% in the summer
 - o Filter out solids
 - o Allows for some settling
 - o Transfers the remainder to the farm
 - o Settled solids are “digested” anaerobically (without oxygen) to reduce the volume and generate methane gas (used to heat digesters)
 - o Solids are then land applied to forage crops on City land – soil tested annually for contamination
 - o Operated and maintained by 11 employees 24/7
- Spraberry
 - o We contract farm approximately 26 sections
 - o Cannot be used for food crops
 - o Raise forage and cotton
 - o Soil tested annually for contamination
 - o Operated and maintained by 4 employees

General Facts

- Conservation
 - o Majority effort is in landscaping as it is the biggest user
 - o Have a contract with MISD, the City's largest customer, to allow for installation of centralized sprinkler systems. We pay for material and they install.
 - o Will be constructing a plant to reclaim wastewater for irrigation for Midland College, second largest user
- Increased supplies
 - o CRMWD
 - They are spraying for salt cedar control
 - We are working on contractual agreements with them to increase allotted amounts
 - They plan to reclaim wastewater for additional supplies in next 15 years. Currently constructing smaller pilot plant in Big Spring
 - o T-Bar Ranch
 - The City owns approximately 30 sections of land in Winkler County
 - It was purchased in the late '50s for future water supply
 - There is approximately 600,000 ac ft of water under this land
 - Current estimates are \$115 million plus to develop this field
 - o Desalination
 - More cost effective incrementally
 - May be closer in
 - Higher cost/thousand gallons
 - Higher quality water
 - Will probably be used as our intermediate step before T-Bar
- Department
 - o Only revenue is from sale of water and collection of wastewater
 - o Receives no revenue from taxes